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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/607,405	06/26/2003	Joseph Merenda	SKY-010	5479

7590 12/28/2004

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EXAMINER

A, MINH D

ART UNIT	PAPER NUMBER
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2821

DATE MAILED: 12/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/607,405	Applicant(s) MERENDA ET AL.	
	Examiner Minh D A	Art Unit 2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13,14 and 16-19 is/are allowed.
- 6) ☒ Claim(s) 1-12 and 15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 4, 8, 11-12 and 15 are rejected under 35 U.S.C. 102(b) as being unpatentable by Chen et al (US 6,816,116).

Regarding claim 1, Chen discloses an antenna comprising: a plurality of phased array elements ((6) having elements (62)) for configuring in an M*N array wherein M and N are integers greater than, the plurality of phased array elements (6) adapted to synthesize a radiation pattern for communicating with neighboring nodes of a mesh network; and a drive circuit (phase shift controller (14) and BFN controller (16)) for supplying microwave power to the plurality of phased array elements (6) and for controlling a directionality of the radiation pattern. See figures 1-7, col.3, lines 15-67 to col.8, lines 1-45.

Regarding claim 4, Chen discloses wherein the directionality is switched (102) in P discrete directions, where P is an integer greater than 1. See figure 3.

Regarding claim 8, Chen inherently discloses the drive circuit is coupled to a transceiver and modem circuit, since, Chen discloses the array antenna and shifter circuit install in a desktop computer (See figure 1) and the desktop computer should have modem and transceiver for connecting antenna system and server.

Regarding claim 11, Chen inherently discloses a multi-layer circuit board that support the plurality of antenna elements, a ground plane, and the driver circuit, Since Chen discloses that, the plurality of antenna elements are connect to circuit board or substrate. See figures 1-6, col.4, lines 5-16.

Regarding claim 12, Chen discloses a substrate for supporting the plurality of phased array elements. See col.4, lines 5-16.

Regarding claim 15, Chen discloses wherein the power divider (102) comprises attenuation in each of the M signal paths. See figures 3.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2-3,5-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Chen et al (US 6,816,116).

Regarding claims 2, 3 and 5, Chen essentially discloses the claimed invention but does not explicitly disclose that, an enclosure is approximately 3 cm thick or dimensions of about 25 cm by about 20 cm or degrees or the elevation of the radiation pattern is fixed or wherein M is 5 and N is 8 or degrees. It would have been an obvious matter of design choice to employ Chen in any desired interest environment in order to maximize

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the usage of his invention, since applicant does not disclose that, all of these limitations can solve any stated problem and for any particular purpose. Therefore, it appears that the invention would not provide any improvement but merely apply the invention in different presentation.

Regarding claim 6-7, Chen discloses the claimed invention except for the elevation of the radiation pattern is fixed or fixed at an incline from horizontal. It would have been an obvious to one having ordinary skill in the art at the time the invention was made to employ a radiation pattern of Chen since, a radiation pattern for a particular antenna system will be easily determined by those skilled in the art given the ease of use and wide availability of radiation pattern in the industry.

Regarding claims 9-10, Chen discloses the drive circuit (14 and 16 controllers) and plurality of phased array elements (6), where the enclosure comprises an adhesive element and wherein the adhesive element is adapted for attaching the enclosure to a flat surface. See figure 1-6.

Allowable Subject Matter

5. Claims 13-14 and 16-19 are allowed.

The following is an examiner's statement of reasons for allowance:

The prior art does not teach that, a multi-layer circuit board having a first side and a second side, with a ground plane formed within the multi-layer circuit board; an antenna array (10), affixed to the first side of the multi-layer circuit board, having $M \times N$ array of antenna elements, where M and N are integers greater than 1, a driver circuit, affixed to the second side of the multi-layer circuit board, having a power divider (60)

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that divides an input microwave signal into M signal paths, a plurality of phase shift circuits are coupled to M-1 paths and the output of each phase shift circuit is coupled to an antenna element, one of the M signal paths is coupled directly to an antenna element in combination with all limitations recited in independent claim 13.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

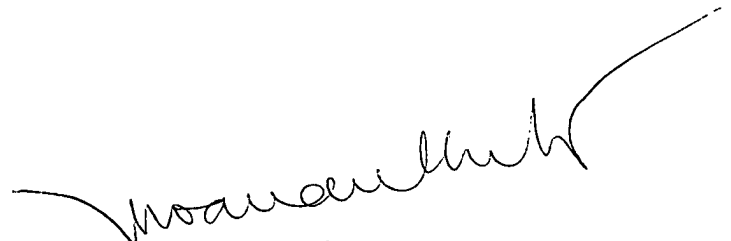
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hong (US 6,266,011) and Ben-bassat et al. (US 6,535,545) are cited to show an array antenna.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Minh A whose telephone number is (571) 272-1817. The examiner can normally be reached on M-F (5:30 –2:30 PM).

If attempts to reach the examiner by telephone is unsuccessful, the examiner's supervisor, Don Wong, can be reached on (571) 272-1834. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and (703) 872-9319 for final communications.

Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center receptionist whose telephone number is (571) 272-1553.



Hoanganh Le
Primary Examiner

Examiner

Minh A

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12/25/04